I CLAIM:

1. A pilot/production, analyzing/curing system comprising:

2. At least one infrared heating energy source;

   a.) at least one UV heating energy source;
   b.) conveying means for moving articles to be treated past the energy sources;
   c.) programmable recording/controller for first analyzing the treatment of coating on the coated articles and subsequently controlling treatment of the coated articles in accordance with the previous analysis, and
   d.) a temperature monitor for detection of the article temperature.

3. A method of curing coating on articles including the steps of:

   a.) heating and analyzing a sample of the article;
   b.) optimizing the heating time, temperature and energy for the best cure of the article; and
   c.) submitting the article to the optimized parameters to cure the coating on the article.

4. A method of curing coating on articles including the steps of:

   a.) heating the article with an infrared energy source; and
   b.) curing the coating on the article using an ultra violet energy source.

5. A method of curing coatings on articles using a high intensity short wavelength energy source including the steps of:

a.) pulsing the energy source to penetrate the coating and heat the substrate for the coating, in addition to heating the coating from one side, resulting in the substrate in turn heating the coating from the other side; and

b.) preventing the coating from heating the substrate by maintaining the substrate above the coating temperature whereby uniform heating and curing of the coating is accomplished.

6. The apparatus of claim 1 including a second infrared heating energy source.

7. The apparatus of claim 1 including a second UV heating energy source.

8. The apparatus of claim 1 wherein the conveying means is a belt.

9. The apparatus of claim 6 wherein the first and second source are zoned separately.

10. The apparatus of claim 1 wherein the infrared and UV sources are in-line.

11. The apparatus of claim 1 wherein the energy sources have variable power settings.

12. The apparatus of claim 10 wherein the variable power settings are capable of short, medium and long wavelength.

13. The apparatus of claim 7 wherein the belt is reversible in drive direction.

14. The apparatus of claim 11 wherein the IR energy sources are capable of providing 100 watts sq.in.

15. The apparatus of claim 1 wherein the recording/controller can record coating temperatures.

16. The apparatus of claim 1 wherein the recording/controller can record substrate temperatures.

17. The apparatus of claim 1 wherein the recording/controller can record energy source voltage.

18. The apparatus of claim 16 wherein the recording/controller can record IR source voltage.

19. The apparatus of claim 16 wherein the recording/controller can record UV source temperatures.

20. The apparatus of claim 1 including cold mirror IR cut filters for minimizing radiated IR energy.

21. The apparatus of claim 11 wherein the UV energy source is capable of providing 600 watt/ sq. in.

22. The method of claim 2,3, or 4 including the step of:

a.) generating a substrate/coating interface temperature sufficient to result in a wetting action at the interface between the coating and the substrate to enhance adhesion of coating of substrate.

23. The method of claim 21, wherein the wetting action occurs before curing of the coating.

24. The method of claim 2,3, or 4, including the step of providing hot air to the coating surface to simulate convection heating in maintaining the coating surface temperature.

25. The method of claim 2,3 or 4 including the step of preheating a powder coat to gel temperature prior to exposure to curing energy.

26. The method of claim 24 wherein the article is transferred in an in-line process.

27. The method of claim 25 wherein the energy source is short wavelength IR and programmed to line speed for energy level and time of process.

28. The method of claim 26 wherein the energy source is 100 watts/sq.in.

29. The method of claim 24 wherein the curing energy is an UV source.

30. The method of claims 2,3, or 4 including the step of selecting coating surface temperature as an input command signal for closed loop temperature control.

31. The method of claim 28 wherein the energy source is 600 watts/sq.in.

32. The method of claim 2, 3 or 4 using a short wavelength as the energy source to penetrate the coating surface.

33. The method of claim 31, including the step of penetrating to the coating substrate with the short wavelength energy sources.

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34. A multipurpose high intensity energy source single zone curing station having:

a.) Short wavelength heating ability

b.) Medium wavelength heating ability

c.) Long wavelength heating ability.

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